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Co., N. Y., a package of *Dicentra cucullaria*, DC., the spurs of which had been perforated and cut by humble-bees. We take the liberty of making extracts from the letter of the lady who sent them. "C. went to the woods, and spent several hours watching the bees. The woods were full of *Dicentras* this spring. He could not find a spike of any species on which there were not one or more punctured flowers. He said the bee lighted on the lowest flower, cut a small hole in the spur with his mandibles, inserted his proboscis, took a sip of the honey, then proceeded to the second flower, where the same operation was performed; then to a third, when he captured him. [The bee was sent us.] He saw several humble-bees performing this labor, and many honey-bees sucking the honey; but in no instance did he see the honey-bee make the incision, and these were the only insects which visited the flowers during his stay. My *Dicentra spectabilis* and *D. eximia* are now in full bloom. The flowers are greatly disfigured by these punctures. Yesterday I observed a bee for a long time while taking his dinner. The spurs of three or four of the lowest flowers on the long racemes were already punctured. He would fly to a flower, place his feet on each side of the spur, either to press up the honey or to 'hold on' better, insert his tongue for a few seconds, and then fly to the next. Every insertion of his tongue enlarged the orifice; but in no case did he make a fresh incision until the supply of nectar was apparently exhausted. Then, with his strong mandibles, he would nip a hole in a perfect flower as quickly as you could with a pair of scissors. They appeared to know the exact moment when the flower was full-grown and the honey secreted." . . . "The insects, as far as I can discover, do not visit the *Adlumia* and *Fumitory*."

55. Fertilization of *Asclepias*.—I notice in the July No. of the *American Agriculturist*, in an article on this subject, the statement that "the point where the filaments or strings which connect them [the pollen-masses] join is very sticky." In the *American Naturalist*, Vol. I., pp. 69, 71, the gland is called "viscid" and "adhesive." In Vol. II., p. 665, of the same work, the pollen is said to adhere "by a glutinous substance." In Vol. III., p. 109, J. Kirkpatrick, who seems to have looked carefully into the matter, attributes the adhesion to the fact that "a hair or claw [?] entering the cleft becomes fast." That this is the case, my own observations, as given on p. 388 of the same volume, confirm. I have never noticed any adhesiveness on the outside of the gland. If a very fine hair is drawn through the cleft, it is caught and lifts out the pollen; but if the hair be too coarse to enter the cleft, I have never found it to adhere to the outside. The fibres of cotton, or the fine long hairs on many plants—the *Asclepias* itself—are best for this experiment—none more so than the long, separate hairs on the petiole of *Ambrosia artemisiifolia*. I have never been able to determine how the hair is held in the gland, whether by some viscid substance contained in it, or by mechanical pressure, and would gladly learn. There is one fact connected with this subject which I do not remember to have seen noticed, and which makes the analogy between the *Asclepiads* and

Orchids still closer. When the pollinia are drawn out of their pockets they lie in the same plane, but in a short time twist about so as to be in parallel planes. In this position, what may be called the knees of the mass are turned to the side opposite to the groove, and present to the cleft of the stigma, when the insect alights, what was before the outer edges of the mass. When moistened with warm water, the pollinia resume their original position. This last experiment I made with the pollen of *A. Cornuti*, Decaisne.

W. H. L.

56. New Publications.—1. *Botany for Young People. PART II. How Plants Behave: How they Move, Climb, Employ Insects to Work for them, etc.* By Asa Gray. New York and Chicago: Ivison, Blake-man, Taylor & Co.

As the title, given in full, indicates, this little work brings together a class of facts constituting a new and most important chapter in Botany. It was time for the separate observations to be combined and the results introduced more directly to the student, and we are rejoiced to learn that Dr. Gray proposes a fuller statement of them. The book is attractive in form, and we hope may lure the young to our favorite study. To more mature minds, imbued with a love of Nature, it cannot fail to prove of great interest. We find a little obscure the brevity of the account of the insect fertilization of Iris, and venture to question the dictum that such plants as *Silene* and *Robinia viscosa* capture insects by accident.

2. *The Bee-Keeper's Magazine: an Illustrated Monthly.* H. A. King & Co., 14 Murray street, New York.

57. *Agave Americana*, L.—A fine specimen of the so-called Century-plant has been on exhibition in this city during the last month. The great heat seems to have hastened its blooming, so that we fear it may be too late for our readers to profit by this notice.

58. *Salices*.—We have omitted the continuation of the Catalogue this month, in order to make a final appeal for help with these Willows. We do not suppose that any one is free from doubts on this subject; but whoever has studied it at all must have determined some of the species described in Gray's Manual, or at least must have some specimens from our vicinity. We want every ray of light. In particular, we have no information about *S. humilis*, Marshall; *S. purpurea*, L.; *S. viminalis*, L.; *S. cordata*, Muhl.; the varieties of *S. fragilis* and *S. alba*, L.; *S. longifolia*, Muhl. Doubtless some or all of these species are to be found hereabouts. No genus of plants is more puzzling, and very good service may be rendered to science in this direction.

59. *Pinus Elliottii*, Engelm.—Mr. H. W. Ravenel has kindly sent us additional specimens (which we have placed in Dr. Torrey's herbarium), and writes: "You will observe the early recurving of the young cones, which seems to be characteristic of the species. Dr. Mellichamp, of Bluffton, S. C., near the sea-coast, from whom I received them, says in his letter of April 30th—'Some weeks ago the young cones were standing off like the arms of a cross, the whole